NAEB JOURNAL

DECEMBER 1958

NAEB Convention Issue

ABOVE: Center of the speakers' table at the annual NAEB dinner in Omaha, October 16. Left to right: the Honorable John S. Cross, President Frank E. Schooley, President-Elect William Harley.

ON THE COVER: Leonard H. Marks accepts the NAEB Citation of Merit for Cohn and Marks from Dr. Harold McCarty, chairman of the Awards committee, at the annual dinner in Omaha, October 16, 1958.

EDUCATIONAL PRESS ASSOCIATION OF AMERICA

THE NAEB JOURNAL VOL. 18, NO. 2 DECEMBER 1958

The *NAEB JOURNAL*, published monthly except June, July, August and September by the National Association of Educational Broadcasters. *Business and editorial offices, 14 Gregory Hall, Urbana, Illinois.* All business and editorial copy, and all subscriptions, should be sent to 14 Gregory Hall, Urbana. Entered as second-class matter November 26, 1956, at the post office, Urbana, Illinois under the act of March 3, 1879. *The National Association of Educational Broadcasters* is incorporated under the laws of the State of Illinois as a non-profit organization for the purpose of furthering the use of radio and television for education. Subscriptions $4.00 a year.

Culture Is Our Business

The meaning of the new electronic media

By **Marshall McLuhan**

Editor Explorations, *University of Toronto. An address to the 34th Annual NAEB Convention, October, 1958.*

I feel very humble, and with regard to you I feel apologetic for inflicting a lot of rather startling and upsetting perspectives on people who have been stimulated over a long convention by some very top-flight things indeed; but I don't see any way of discussing the kind of materials that you are all engaged with—that we are all living with daily—except in a very upsetting way.

It seems to me that we are undergoing more upsetting experiences daily in our kind of world than anything that can be said about them. The lived reality is more upsetting than anything one can say about it. If I appear to say upsetting things, therefore, it is only because I feel that the actuality is far more upsetting than what we regard as our present problems. Let me try to relax the occasion a little bit by pointing to what seems to me a very marked trend in the joke-telling style of our time, which I should like to tie in to electronic developments. The long story, the leisurely-told anecdote, seems to me to have departed from our midst some time ago and to have been replaced by the tightly-capsulated joke of which there are so many known to us all. Let me remind you of a few of the type, such as "Let us up periscope and see if the cement is hardening." Perhaps a grim thought at this stage of a long convention. But "Let us up periscope and see if the cement is hardening" would, I think, twenty years ago have taken a long anecdote form. It would have been something said by somebody to somebody, and so on. Or you hear a great quantity of jokes in this form: "We are thinking of enlarging the circle of our friends to include a few people that we like." Or, overheard after a conference: "I like the way he

nods; he really communicates."

You know the "sick jokes" that have been going around. They have this capsulated character, too. Recall the two test pilots in the plane, one saying to the other, "Don't touch that lever over there, Fred. It opens the bomba-a-ay." This one I heard at an earlier convention of the NAEB: "I feel like a mosquito at a nudist colony. I just don't know where to begin." That isn't inapt as regards the problems facing me for the next few minutes.

Let me plunge in by commenting on the question I am often asked, and probably you are too, "Why this sudden interest in communications? Why is everybody talking about communications? What on earth do they mean by communications?" Well, it seems that you can handle that question in a great many ways—and properly. But from one point of view, the largest industry in the world today is that of packaging and moving information. Around the clock and around the globe the technological processing and moving of information is the biggest industry on the planet; and that ties in with the title of this talk, "Culture Has Become Our Business." Culture has become the biggest business in the world because the moving of information is directly tied to the learning process. The global community has become a community of learning—around the clock and around the globe. The largest business in the world is the packaging, moving, and absorbing or consuming of information.

Now this is not accidental. The very electronic form which relates all this to the speed and movement of light is, in terms of earlier forms of technology, a very much less tangible thing, very much more related to the habits of learning and the habits of mind connected with learning. There is a sense in which the electronic age is post-mechanical, so that when we speak of the technological moving of information as the biggest business in the world, it also points to the fact that there is a huge change overtaking the business community itself. The business community itself is becoming more and more a community of learning and of relearning, so that the huge industry expenditure on education today arises from a constant need to keep executives apprised of new information necessary for decision-making. And this is characteristic of all people in business, no matter what stage or level they are operating at, so that learning and the absorption of information in business itself has become a major part of the business operation. "Proust for executives" is not just a joke. It has become a reality in many management training schools, where the work of art is used as a model of the patterns of the total community, so that young executives can more quickly orient themselves in the center of community interests and in their own age.

Another very basic fact in this change, that is felt in education as

well as in technology, is that as we shift from mechanical to electronic technology, we experience a huge shift in the pattern of knowing and the pattern of living—from linear to nuclear forms, as it were. You can see at once that there is something characteristically linear in print. The succession of items put on the line in the printed form is not only necessary for that sort of mass production; it is characteristic of all the subsequent methods of industry and all the methods of education ever since the invention of printing.

Our own concern today about what we call "nuts and bolts" is concern with the fact that linear instruction is not adequate to a nuclear age. The electronic is not lineal. It is total and field-like in its simultaneous relations. The images that are presented increasingly to you in ordinary living today lack this linear quality that the older kinds of experience and learning manifested. They have become more and more nuclear, global, inclusive. The mathematicians call these images those of non-Euclidean space, which is another way of saying that they are not visualiable, and they are not linear. Non-Euclidean space is the space of modern math, modern electronic technology, and of our new global community of learning.

Now one thing that I want to stress is that when you release a new form by technological means into a community, this form has a life of its own that is felt and experienced subliminally by all ages and at all times, even when it isn't being thought about or noticed.

Much of the maladjustment, much of the stress in contemporary educational and social effort is the result of the terrible strain that comes from working on a linear plane and trying to cope with nuclear structures and nuclear problems of learning. There is one huge abyss which is opened between the teacher and the student in this respect — the teacher is committed to learning processes and textbooks that are linear, while dealing with students who have very little experience with linear forms and a huge experience with the nuclear. This means loss of motivation in the classroom; it means loss of attention in the classroom — on a huge scale — terrific leakage.

I can perhaps compactly and perhaps too compactly state this point by saying that the medium is the message—that ultimately in any form whatever that you are employing: culturally, educationally, socially, the pressure from the form of the medium itself is ultimately far in excess of any capsulated information that that medium conveys. The medium ultimately is the message, and it is also the first message that the young people pick up in a new age like our own. The message that the young pick up from electronic forms like radio and television is a very different one from the message that the highly literate person picks up from the same forms, be-

Continued on page 30

The Chelsea Closed-Circuit Television Project

A pioneer experiment in school-community education

By **Lawrence Creshkoff**

Director, Chelsea Closed-Circuit Television Project. An address to the 34th Annual NAEB Convention, October, 1958.

Environment of the Project

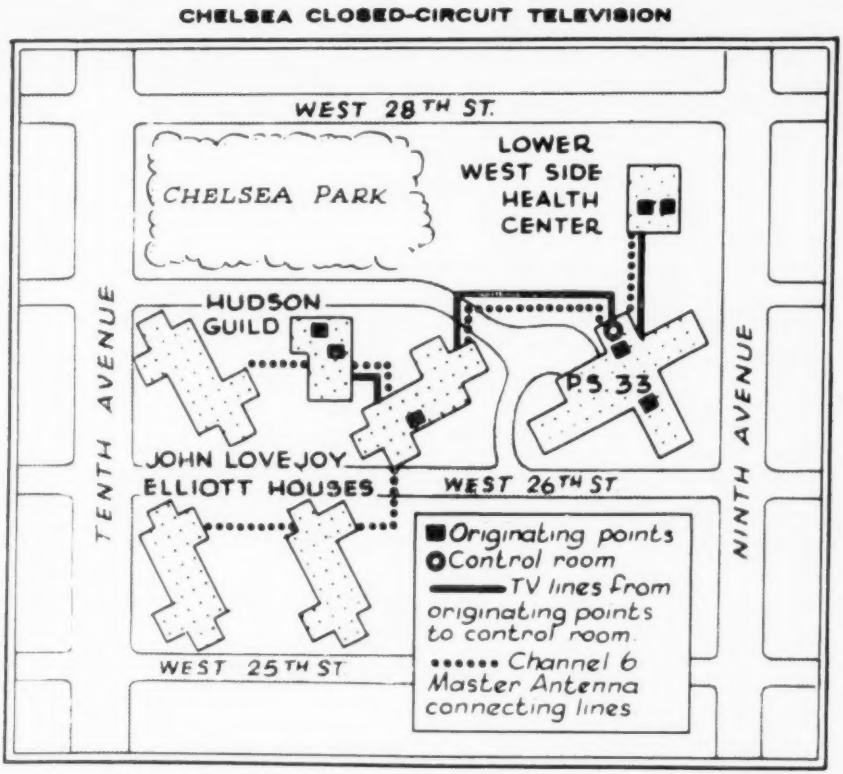
About a year and a half ago — on April 22, 1957 — New York newspapers carried a story about the establishment of the Chelsea Closed-Circuit Television Project under a grant from the Fund for the Advancement of Education. The Project was termed a pioneer experiment in school-community education; an immediate objective was to be the attainment of a closer relationship between school and community and to "raise the sights of an entire neighborhood."

The specific locale was the area on the West Side of mid-town Manhattan running from 25th Street to 28th, and from Ninth Avenue to Tenth Avenue. Within this three-block area are found:

1) four 12-story low-income apartment buildings operated by the New York City Housing Authority, housing 607 family units. These are the John Lovejoy Elliott Houses. The residents comprise three primary ethnic groups, in roughly equal thirds numerically: mainland white, mainland Negro and Spanish-speaking persons of Latin America and Puerto Rican origin.

2) P. S. 33, Manhattan — the Chelsea school. P. S. 33 is an elementary school, kindergarten through grade 6, with an average pupil enrollment of 1100, approximately half of whom live in the Elliott Houses. In addition to the normal graded classes, P. S. 33 has two special orientation classes for non-English speaking youngsters, and a special class for the intellectually gifted children in the 5th and 6th grades. Besides the day-school classes, eight evening classes in elementary English for adults are conducted at the school three nights a week.

3) Hudson Guild Neighborhood House, a settlement house established in Chelsea in 1895 by the late John Lovejoy Elliott, for



Physical layout of buildings interconnected by Chelsea Closed-Circuit Television Project on the West Side of Midtown Manhattan. (Photo courtesy New York Times)

whom the now surrounding housing project was named. Dr. Elliott used to like to tell the story of how, after he had rented a small room in an old building, he went out into the street looking for recruits. He found a group of young men shooting dice. "Don't you know it's against the law to shoot dice on the street?" he said to them. "Come on in here, where the cops won't see you." From that small beginning, Hudson Guild has grown so that it is, really, a community center for the entire neighborhood and especially an oasis for teenagers in what would otherwise be a coldly austere institutional atmosphere. (I should hasten to add that shooting dice ceased to be a Hudson Guild activity on that first day in 1895.)

4) The Lower West Side District Health Center of the New York City Department of Health. Here, the normal public health

services are performed: chest x-rays; well-baby clinics; dental care for indigents; immunizations; an educational program, etc.

Next to the Health Center and opposite Elliott Houses is that rarest of delights in New York: a playground.

Physical Scope

The seven buildings have now been connected by a master antenna, video-audio origination and RF distribution system. Two remote originating points have been set up in the Health Center, one in Elliott Houses, one studio and one remote point in Hudson Guild, and one studio and one remote point in P. S. 33. All video-audio signals are normally fed to the Control Room in P. S. 33, after which they are changed to a 3600 microvolt radio frequency signal and distributed to 42 classrooms and the auditorium of P. S. 33, 8 viewing locations in Hudson Guild, and, potentially, 607 receivers in Elliott Houses.

Objectives

In the broadest terms the Chelsea Closed-Circuit Television Project has three primary objectives:

1. the development of techniques of instructional television utilizing minimal equipment and personnel, for direct teaching, enrichment of the school program, and teacher training;

2. exploration of the effectiveness of teaching simplified English and Spanish as a second language over television by means of films employing the Language Research Graded Direct Method, to children and adults, in classroom and in home, with teachers and without;

3. Improvement of community integration: increasing the sense of identification of residents with the community; opening opportunities for leadership and participation in neighborhood life; increasing communication between school and parents and increasing parent participation in school affairs; increasing knowledge and utilization of health, medical, and other community resources; developing an interest in further education for adults.

In attempting to achieve these objectives, the project is utilizing resources made available by the three sponsoring agencies: the Board of Education of the City of New York, Hudson Guild, and Language Research, Inc., and resources of the six participating agencies: New York City Department of Health, New York City Department of Welfare, New York City Housing Authority, New York Public Library, New York University Division of General Education, and Harvard University Graduate School of Education.

Operations

The In-School Program (to which Elliott Houses residents, parents, and shut-in pupils can also tune in) now consists of an average of three hours of live programming

and four hours of language film programming per week. The live programs cover such curricular areas as elementary science, music, speech improvement, health instruction, physical activities and story telling. The viewing time per class varies from a half-hour to two and three-quarters hours, depending upon grade and achievement levels.

TV teachers are recruited from the school faculty; they are provided with two hours of relief to prepare their lessons and rehearse, but they continue to be responsible for their normal classroom assignments. Plans are even in progress to permit the TV instructor to teach the lesson with her class present in the studio.

It will be recalled that one of the project's objectives was the development of instructional techniques utilizing minimal equipment and personnel.

The video-audio system was engineered by General Precision Laboratory, using industrial vidicon cameras and a specially designed film chain. The control room is replete with non-standard equipment. Video panel, audio amplifier film chain remote controls, camera control units are all built into existing shelves in what was until a year ago a store room in the basement of P. S. 33.

Two flights up, in a former classroom that has had power, acoustic tile ceiling, curtains, and lighting track added, all live in-school programs and a number of community programs originate. Four GPL industrial vidocon cameras are mounted on fixed camera tripods. One tripod dolly is available.

Available lenses are 16 mm, 26 mm, 50 mm, 100 mm and a 17 to 70 mm Berthiot Pan Cinor zoom. Four Bolex lens extensions make possible extreme close-up work. It should be noted, however, that only one lens is available per camera at one time: there are no lens turrets. Moreover, the cameras have no viewfinders. Focusing and lens adjustment can be observed only through a single studio video monitor. Once a lesson or program has begun, there can be no previewing.

The studio lights are suspended by rollers from four longitudinal and eight transverse I-shaped aluminum rails, manufactured by Century Lighting Co. Thus suspended, any light can be moved four or five feet in almost any direction by a simple shove with a window pole. A modest lighting budget can be most efficiently utilized by moving the available lights as needed. Moreover, the moves can be made in a matter of seconds, usually without having to resort to ladders. For extra flexibility, two lights are kept on floor stands.

With the beginning of the present school year, P. S. 33 teachers who are presenting TV lessons are,

P. S. 33 Room 201 during a science lesson for Kindergarten through Grade 2. Mrs. Frances Schwartz, In-School Coordinator of Chelsea Project, serves as her own cameraman, producer, director, switcher, and "talent." Enlarged image of leaf toward which she is pointing is visible on TV receiver at right center. (Note: Multipurpose set was adapted from Ronald Hull's designs for KUON-TV's studios at University of Nebraska.)

quite literally, serving as their own writers, talent, directors, floor managers, cameramen, camera switchers and, to some extent, producers. By means of a small console on the demonstration table, desk or even piano, the TV teacher decides when to cut from Camera 1 to Camera 4 and actually pushes the button that makes the switch. All camera positions have been predetermined; all graphics have been set up on easels in the order needed, etc.

In the studio classroom the teacher is, or seems to be, quite alone. She sees the image she is sending out on the video monitor and again on the TV set that shows what the classes are seeing.

The switching console indicates which camera is "on the air." It also has an emergency light which serves as a signal from the control room in case anything goes wrong. On seeing the flashing red light, the teacher listens to a small ear-

Continued on page 22

Television: An Aid to Survival

Regardless of the amount of criticism directed toward American education, is it not true that our universal system of free public education has been the major factor in giving the United States the highest standard of living in the world? Over the years the critics of American education have frequently urged the adoption of the European system and more recently of the Russian system. However, does not thoughtful consideration of the facts by parents and teachers alike always lead to the conclusion that the present educational system, while not perfect, more nearly meets the needs of the young people of the United States than any other?

Now that television has proved its potential to influence its viewers, and, when used properly, to serve as an important aid to the educational process, is it not time to assess television as presently used and compare this with other and more important uses? Can America afford to allow an important educational device to be devoted almost exclusively to mass selling and mass entertainment, important as both are?

The National Broadcasting Company began on October 6, 1958, and will continue through June 5, 1959, a pioneering experiment in using its coast-to-coast network resources for the purpose of improving science education. This experiment involves the presentation from 6:30 to 7:00 a. m., Monday through Friday, of a college course consisting of 160 programs and entitled, "Atomic Age Physics." More than 300 colleges and universities throughout the nation have agreed to offer credit for the successful completion of this course. While the course is intended primarily for high school science teachers, it is being viewed by a large audience of college students, gifted high school pupils, engineers, and others who wish to increase their knowledge of nuclear physics.

Principal teacher of the course is Dr. Harvey E. White, professor of physics at the University of California, Berkeley, and a consultant to the Atomic Energy Commission. During World War II, Dr. White directed research for the National Defense Research Committee, the Office of Scientific Research, and the Manhattan Project. Other internationally-known sci-

Continued on page 21

Broadcasting Languages By Radio

Report on ten years of programming language courses

By **John Henderson**

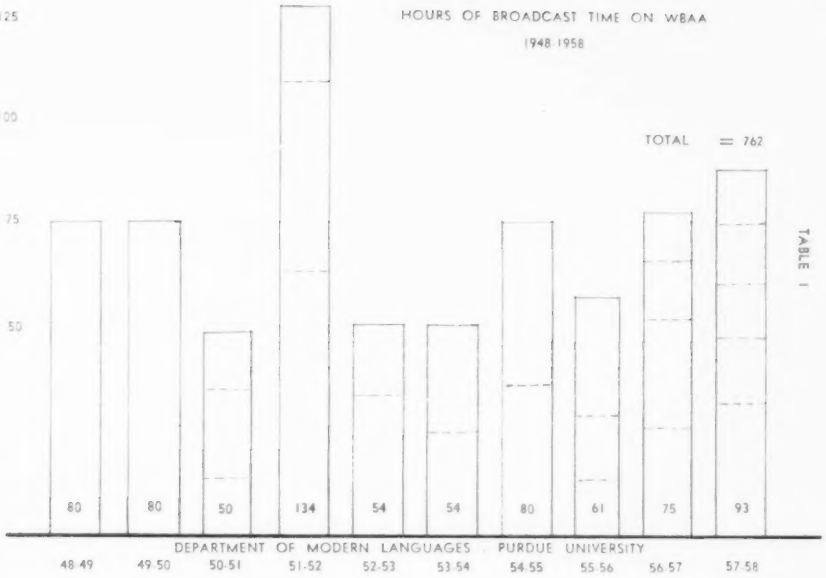
Educational Supervisor, Station WBAA, Purdue University. An address to the 34th Annual NAEB Convention, October, 1958.

It is, of course, unnecessary to remind you of the trend to enlarge and intensify the program of foreign language instruction in our schools and colleges at all levels. This has been on the increase since World War Two, and the recent satellite-launching race has given added impetus. Even one provision of the Hill-Elliott Bill is aimed at making possible the training of more and better teachers of foreign languages.

The Department of Modern Languages at Purdue University has stayed at the forefront in experimenting with methods to improve classroom instruction and in supplementing the on-campus program with radio and television broadcasting. One of the most recent and outstanding ventures in broadcasting language instruction by radio occurred last spring at Purdue when 14 weeks of daily lessons in elementary Russian attracted over 750 listener-students. Called *Conversational Russian*, the series "enrolled" 500 adults and over 200 Indianapolis high school students, each of whom bought a text and was supplied a manual. Of the 500 adults, 294 were still with the program as regular listeners at the end of the tenth week, and over 90 of these attended two night meetings at our station, some of whom travelled from points 20, 65, and over 100 miles from Lafayette.

Can languages be taught by radio? A partial answer may appear in the nature of the language broadcasting program at WBAA during the past ten years.

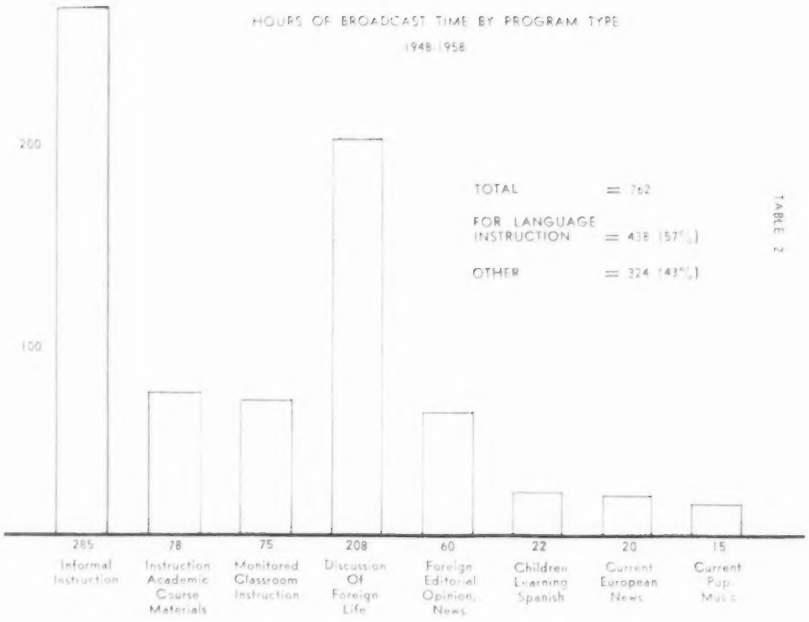
From 1948 to 1958, the Purdue Modern Language Department and WBAA staff broadcast 28 program series (under 14 different titles) making up a total of 2,827 separate programs using 762 hours of broadcast time or, for the ten academic years, an average of



slightly more than 2½ hours per week. This effort resulted in an average of about 9 (8.8) programs per week for the ten-year period. Table 1 shows this broadcast time by years. During this time, the programs used the on-the-air services of 24 different faculty members of the department and 52 other individuals, not counting WBAA personnel. Rebroadcasts of some of the programs, on the NAEB Network and on other stations, total 6, 297. The current programs (seven series), just started by the Modern Language staff, occupy exactly five hours of our air time each week or about 5½ per cent of our total broadcast week. These programs are not considered as part of this report, nor are the 202 television programs supplied by this department during the past six years.

Types of Programs

The program series' titles in the order of their length of time on the air during the period are: *Report from Abroad*, 6 years; *Continental Comment*, 5 years; *Buenos Dias Amigos*, 3 years; 2 years each—*Say It in French*, *Hier Deutschland*, and *News from Europe*; 1 year each—*Pronunciation of European Languages*, *Sixth Grade Spanish*, *Let's Look at France*, *Language and You*, *Words Abroad*, and *Paris Rendezvous*; and for one semester each—*French Civilization* and *Conversational Russian*. These programs, as classified by the Modern Language Department and the WBAA staff, fall into eight types: informal instruction, monitored classroom instruction, instruction with academic course materials, discussion



of foreign life, panel presentation of news, children learning Spanish, current pop music, and current European news. Table 2 shows the relative amounts of broadcast time devoted to these different program types for the period, a little over half of which (56% or 438 hours) are given to language instruction and 44 per cent or 324 hours to other types. These instructional programs, this 56 per cent, fall into three classes: *informal* instruction, which leads all types in amount of broadcast time; *direct* instruction of the listener, using regular academic course materials; and broadcast of an on-campus course of language instruction while the listener-student, with printed material supplied him, participates *in absentia*. Although taking a major share of air time, these instructional programs attracted a smaller overall audience, estimated at about one-third that of non-instructional programs.

Administration and Production Methods

How have these programs been organized and broadcast? What general policy has grown out of the cooperation between the Modern Language Department and WBAA personnel? The "informal instruction" programs (*Buenos Dias Amigos, Say It in French, Conversational Russian*) devote about one-third of each 15-minute broadcast to actual instruction in the language, with a conversational approach, and the remainder to background material about the language and its people. The broad-

Continued on page 19

Eyes for Mankind

TV provides new eyes for medicine

By **Dr. David S. Ruhe**

Director, Department of Audio-Visual Education, University of Kansas School of Medicine. An address to the 34th Annual NAEB Convention, October, 1958.

In his address at the Conference on Educational Television[1] last May, Dr. Marshall McLuhan stated the case very bluntly and well. "We are now . . . spectators watching a 500-years-old cultural and educational achievement go down the drain. Somebody has pulled the plug. A way of life based on the primacy of the printed word is dissolving in front of us."

Of course, *we* are the folk who have pulled and are pulling the plug. And with our ever-more-potent visual and auditory media we are in the process of fulfilling one of man's blithest dreams: *we are learning how to project our visions.* Indeed, with our visual tools we are achieving a new kind of "literacy." Soon there may be universal ownership of automatic cameras: with free and easy flow of pictures, we must create new words for this approaching time of common visual competencies, for "literacy" of course applies to letters and an alphabet. Gifted men of the verbal skills must undertake some important coinage of fitting words suited to a new age of the primacy of the pictorial media.

Voice and Vision

As we struggle forward into the coming era of human projective vision, with its true *democratization of the visual media,* first we should identify positively our enemy, who perhaps permanently is also our best friend—our voice box, our larynx. This personally-owned strident soundmaker casts its spell upon us, and creates what I like to call the teacher's grand illusion: that teaching is talking. Naturally, our voice is our friend, since it is the flexible tool of our personal communication. But it is our enemy because we trust it too much, are unwilling to undertake new visual skills of a changing hour.

1. McLuhan, Marshall. *The Role of Mass Communications in Meeting Today's Problems.* Address at the Conference on Educational Television, Washington, D. C., May 26, 1958. Printed in the *NAEB Journal,* October, 1958, under the title, "Our New Electronic Culture."

This film segment from THE LARNYX AND VOICE[2] of Drs. Hans von Leden and Paul Moore of Northwestern University, reveals much concerning the extraordinary nature of the voice. *(Three-minute film excerpt projected)*

It is an appetite-whetting motion picture, which of course should be seen in its entirety and in full depth of its scientific implications. It has been projected for one reason: it shows the paired vocal cords as two matched vibratory organs producing sound under pressure of the respiratory air stream. With this respectably facile instrument, whose basic sounds are modified by lips, cheeks, tongue, pharynx and sounding surfaces, we create song and also the symbol system of language. But since words and their meaning in systematic language are arbitrary, we have created Babel as well.

We do not really believe, we who make our living with our tongues, or have got where we are through verbal proficiencies, that words are as non-specific and arbitrary as they really are. Nor, by contrast, do we really believe as yet in the specificity of pictures, since we are still so wedded to words. Because we do not believe, we will not work hard enough to use the pictorial skills that are even now possible. But the rug has been pulled. The jig is up. We are changing from verbal to visual dominance in our society. The smash will be tremendous, a cultural implosion.

As a physician and one-time scientist, let me begin at the beginning, with a superficial examination of some crucial observations which tell us what we are as *Homo sapiens*, man. Of our perhaps nine senses for perceiving the phenomenal world about us—hearing, taste, smell, pain, cold, heat, balance, position sense (of muscle, bone, joint and articular surfaces) —there is much evidence regarding the primacy of vision as a sensory input system. The dog may be dominated by his smelling brain, the bat may be essentially a hearing beast, but we humans are preeminently seeing creatures. As Ann Roe[3] and others point out, a high proportion of humans *think* primarily in pictures, and it is an important measure of their brain power. The incredible life flood of pictorial impressions we gain from our retinae day by day flows into our brains, there to be associated in various ways with other sense data altered and shaped by what has been called the psychological filter. Apparently language functions in part as the systematic structuring of these memories. Stored as engrams of memory in a pattern of neuronal activity of

2. Von Leden, Hans and Moore, Paul. *The Larynx and Voice: Physiology Under Daily Stress*. Scientific report film from the Language Research Laboratory, Northwestern University, and the William and Harriet Gould Foundation.

3. Roe, Ann. *"A Study of Imagery in Research Scientists."* Jour. of Personality, 19:1, June, 1941.

incredible facility and virtuosity, a myriad of multisensory, psychically colored images are somehow available in that incredible structure, the brain.[4] Dr. Wilder Penfield, noted McGill University neurosurgeon, has been a pioneer in exploring the human brain. One of his patients epitomizes the challenge and the wonder of the picture-storing brain.

A young girl with temporal lobe focal epileptic seizures was operated upon in order to seek to discover and destroy the center of brain irritation. Her brain was exposed under local anesthesia, and minute electrodes delivered a tiny stimulus to the brain cells of the entirely conscious girl. With delight she described in detail a girlhood memory which she asserted she had not thought of from that day to the time of stimulus. Repeated stimuli failed to bring forth the same memory, but evoked others, fitful flashes from the past.

We cannot undertake to discuss the complex experimental problems of seeking to probe the secrets of brain structure and function. But the remarkable thing about this sort of data is that it suggests that every visual image of sufficient original input intensity is somewhere, somehow stored in a facilitated brain pattern, or engram, waiting to be evoked by the right kind of internal or external stimulus. Unfortunately, with sorrow we recall that we cannot project our images of this unique and rich internal world to our friends and loved ones. We cannot share directly with others the pictorial stuff of our inner lives. Extra-sensory perception, notwithstanding the experiments which Dr. J. B. Rhine has performed but which others cannot confirm, promises nothing immediate with telepathy. But we can and do dream of the time when we humans can project our visions. At such a time, too, we will learn better how to learn and how to recall through pictures, where now we are sloppy and fuzzy in our observations. We shall become practiced in pictures as now we are practiced in words.

So far, the best we have been able to do is to accept with good grace our only projective device of rich enough potential: our friend and comforting enemy, the larynx. It is all the more critical that we must work mightily with the new photographic and electronic media which move ever closer toward being true visual projective tools of the individual.

Projective Vision for All

Since we all work professionally with the visual projective media, perhaps we should be clear about our grand goal. We must further in every way *the democratization of the visual media*. For when all are visually literate, the visual professional truly can ply his trade. Fortunately, we are clearly upon the highroad even

4. Eccles, J. C. "*The Physiology of Imagination.*" *Scientific American*, 199:3, 135-146, September, 1958.

now. From drawing to lithography, from engraving to photography to our electronic energy-transforming systems, the pace is accelerating constantly. Our American society has already engineered a living visual substratum for our children by means of the comic books, the movies, illustrated magazines and books, and now television. Our children know not that they learn by pictures. Rather it is the life they live, the air they breathe. It is their world.

One lesson is this: the students are ahead of the teachers, in the main. The world of visual learning is the students' world-taken-for-granted. As for us who are teachers, we by no means yet have the conviction that each of us must own a camera, must take pictures prodigally, become skilled in visual thought and deed as we are skilled in spoken and written language.

In medicine there are some few intriguing straws in the wind. A few medical specialists have all unconsciously begun a systematic attempt to record their memories by methodical photo-documentation. As an example, plastic surgeons make many still color shots of their patients for purposes of record, study and teaching. One can fairly say that projection of these personal case materials projects the visual "memory" of the surgeon. The language of the surgeons then provides the connective tissue and the rich associative data, while the specific pictures are the bricks of basic content. Similarly, neurologists concerned with neuromuscular difficulties are documenting and projecting in motion pictures their "memories" for cases.

Dr. McLuhan has said that "the medium is the message."[5] This profound truism will become accurate for *scientific* education only if one makes clear at the outset a fundamental tenet concerning the message as distinct from the medium. In science the message is dominant. Fact is king. Content is both church and credo. Such a basic tenet is understood best in its negative qualifications, by us who are under the spell of the personalities of entertainment television. Negatively then, the personality of the teacher is only a carrier system for the content. And the communications medium is the carrier both of the human carrier and of the message proper.

To be sure, there is a great place for Frank Baxter, with Shakespeare perfused into every cell of his body. So too there is a vital place for scientists who embody a passion for physics or medicine or any other subject and who can be the motivation and identification of the student self. Louis Pasteur, recognizing this, advised the students at Edinburgh to "worship great men." But the man is only the carrier system, the medium. His obligation in all humility is to create the most direct

5. McLuhan, op. cit.

Continued on page 26

NAEB Research Fact Sheets

Series I: The Effectiveness of Television as a Teaching Tool.

47. Project Number One: An Experimental Study of College Instruction Using Broadcast Television.

By Robert E. Dreher and Walcott H. Beatty, San Francisco State College, San Francisco, California, April, 1958.

This study was sponsored by a grant from the Fund for the Advancement of Education. The overall purpose was to explore the feasibility of presenting four General Education courses to regular college students via the medium of broadcast television using the facilities of Station KQED. Three groups were compared in each course: 1) students taking the course as it normally is presented on the campus (control group), 2) students viewing the experimental telecourse in their own homes (At-Home TV group), 3) students viewing the experimental telecourse in a campus classroom (On-Campus TV group). Each of the telecourses represented an adaptation of the regular campus class for television presentation. Students taking the telecourses watched two weekly television broadcasts and also had regularly scheduled discussion and quiz sections on the campus. Three freshman courses (Psychology, Basic Communication, and Creative Arts) were studied.

The broad objectives of this project with the findings relevant to each follow:

Objective One: To compare the three groups in each course on the basis of achievement in the course.

1. The three modes of course presentation were equally effective in

bringing about increases in knowledge of course content, as measured by academic achievement examinations.

2. There were no significant differences in the instructors' grades assigned to the three groups in any of the courses.

Objective Two: To evaluate the attainment by the groups in each course of broader educational goals related to the General Education Program of the College.

1. The groups in each course were compared on instruments designed to measure varying degrees of self-insight, self-acceptance, and the perceived self-acceptance of others. No significant patterns associated with manner of course presentation emerged from these comparisons.

2. While there was some evidence to suggest an "isolation effect" in the At-Home TV groups, this held up statistically only in the psychology course.

Objective Three: To investigate a number of student characteristics which might be related to differential success in the three groups. These were: previous grade point average, college aptitude, auditing ability, and "need to achieve."

1. No identifiable type of student emerged as profiting more from television instruction than from classroom instruction. Although both high and low ability students in the television groups of the psychology course out-performed their counterparts in the control group, in none of the other courses and on none of the other variables did comparable differences among contrast groups occur.

Objective Four: To determine student attitudes toward telecourses especially adapted for the broadcast television medium.

1. There was an overwhelming preference for regular campus classes.

2. The most favorable attitudes toward telecourses were shown by students taking the courses at home. Students in the on-campus TV group tended to dislike and to be critical of this type of course reception. Students in the control groups, without experience in the telecourses, tended to be negative toward them.

Objective Five: To survey the performance level of groups (other than regular college students) who took the courses by television, without regular discussion periods on the campus.

1. A group of high-ability high school seniors performed as well as the college groups in the psychology course.

2. Persons in the general public who also enrolled in these courses and who completed the course, all

Continued on page 3A

NAEB

Research
Fact
Sheets

Series I: The Effectiveness of Television as a Teaching Tool.

48. Report on Some Uses of ETV in Fifteen School Systems of the United States.

By Katherine Glendinning and Veronica Casey, Denver Public Schools ETV Summer Workshop, June 16—July 18, 1958.

The Elementary Principals' Educational Television Committee prepared a questionnaire which was sent, in May, 1958, to twenty-eight school systems in the United States. The purpose of this study was to obtain answers to questions being asked by Denver Public Schools' personnel regarding:

1. The instructional use and effect of ETV upon the total program.
2. The most suitable ETV equipment for school use.
3. The effect of ETV upon teaching personnel.

The intent of this study was to present more information on ways in which some other school systems are using this educational tool.

The following summary statements are based on data taken from questionnaires which were returned by fifteen school superintendents or their designated assistants. Similar surveys conducted by Dr. Harry J. Skornia and Dr. Ryland Crary bear out the findings of this report.

1. Eleven schools reported that ETV is regarded as a reinforcement and teaching aid to classroom instruction rather than an invasion or distraction.
2. Classroom teachers are provided ETV schedules and suggestion sheets in thirteen of the fifteen reporting cities. Over half of the responses received indicated that

workbooks for ETV lessons are essential.

3. A committee is involved in the preparation of classroom materials for ETV lessons in eleven schools. Teachers prepare the classroom materials for ETV lessons in seven schools while study groups prepare classroom materials for ETV lessons in four schools.

4. ETV programs are used mainly for direct instruction in thirteen schools, for enrichment in ten and for reenforcement of classroom instruction in seven of the fifteen schools.

5. ETV is used for supplemental homework and for motivation in four of the fifteen school systems.

6. Teachers are expected to prepare for ETV classroom programs in ten schools, to view programs with pupils and to follow up the TV lesson in thirteen of the school systems, and to evaluate the TV programs with pupils in ten schools.

7. In addition to the use of ETV for classroom instruction, ETV has been used for faculty meetings in seven of the fifteen school systems.

8. Classroom instruction in twelve of the fifteen school systems has been improved through the use of ETV.

9. ETV programs which have been of help to teachers were, in order of the most frequently mentioned, science, English, mathematics, foreign language, spelling, social studies, art, music, health and safety, history, American literature, news programs, and home economics.

10. The TV sets for classroom use are provided by parent-teacher associations in eleven of the fifteen school systems, while school districts provided sets for ten of the schools.

11. The regular classroom seems to be the most practical place for viewing TV programs, according to the reports from ten school systems.

12. The programs are broadcast for the most part over VHF television channels.

13. Twelve schools indicated no adverse reaction from homework assignments over TV.

14. TV instructors are selected from teachers in fifteen of the schools, from administrators in six, and from university professors in four of the school systems.

15. The use of ETV has not changed the number of teachers needed in the schools in nine of the school systems; it increased the number of teachers needed in only one school system and reduced the number needed in one other school system.

JEANNIE DIETEMANN

NAEB Research Fact Sheets

Series I: The Effectiveness of Television as a Teaching Tool.

52. Status Report on the Chicago City Junior College.

Compiled from a letter to the faculty of the Chicago City Junior College from Clifford G. Erickson, April 15, 1958.

As mentioned in the *News Letter*, the Chicago City Junior College has used open-circuit television to bring regular college courses to the adults of Chicagoland. In doing so, they have found that a new group of adult students, having an average age of thirty-five, possess a higher degree of motivation and ability than that of the average college student. For each credit student, they enroll two not-for-credit students. These people send in one dollar for the study guide, and in a suprisingly large number of cases, they follow the lessons faithfully and even do some of the assigned work. These people do not receive any service in grading of papers, nor are they allowed to take examinations.

Mr. Erickson, in his letter to the faculty of the Chicago City Junior College, mentions this as one of the problems to be considered in the experimental design for their third year of telecourses. "Is a course designed and taught to reach the home adult (average age 35 years) adapted to use with younger, and perhaps less motivated classroom students? Is a new course designed for televising to classroom groups adapted to the older home television student?" As a tentative answer to this question, Mr. Erickson suggests that in some cases, it is possible to teach to meet the needs of both of these groups. In other cases, teaching can be directed at one group or the other while trying to evaluate the bias introduced with the other group.

Generally, the plan for the third

experimental design is to set up a few experimental and control classes in the fall (1958) semester for the comparison of televised and conventional instruction for day college-age students in the branches of the school. This comparison was suggested by the teaching faculty, who pointed out that until television is used to instruct college-age day students and compare their achievement with conventional instruction of the same kind of students, the hypothesis concerning the quality of teaching via television for normal-age day college students will not have been adequately tested. Mr. Erickson feels there is hope that morning and early afternoon broadcast hours will be available to permit the school to undertake this work. The approach will be that of having very few classes involved, with considerable effort directed at careful control of the many variables involved, a few of which are mentioned below.

1. How can we select students for enrollment in the experimental television sections without introducing variables which may be more significant than the difference in method of instruction? Suggested answers to this question are using a variety of methods and evaluating the biases they introduce, having voluntary student selection of TV sections listed on the master program, or removing choice from other students by having no notations on the master program. Choice can be offered to a third group of students by allowing the students in one or two sections to elect TV or conventional instruction at the first meeting of the class.

2. How can we equate experimental and control class groups? In addition to age, mental ability, grade level and pre-test ability, the differential in withdrawal rate and the ability and attitudes of the withdrawing students is mentioned as an important factor here.

3. How can we keep the two methods of instruction distinct so difference in results can be measured?

The experimental classroom group will receive direct teaching via television without daily supporting instruction. These students will have a section teacher who will meet them on the same basis as a section teacher now meets the home television student. The conventional instruction would utilize all of the usual techniques and materials of classroom instruction.

4. How well can the achievement of the two groups be compared? After experimental and control teachers have agreed on objectives, they can build a pre-test midterm tests and final examinations which measure progress toward the primary course objectives. Where objective evaluation of essay materials is necessary, jury evaluation can be used after removing identity of experimental and control papers.

JEANNIE DIETEMANN

NAEB Research Fact Sheets

Series II: Production Principles

18. Open-Circuit Television and Adult Education.

By Anne Durrum Robinson, University of Texas, July, 1957. 84 pages, including tables of results.

This report is based upon a portion of Miss Robinson's thesis, running some 300 pages, which was submitted to the University of Texas. The complete thesis deals with the relationship of television's efforts to adult education in general, a complete analysis of the "Let's Teach!" teacher-recruitment-and-education project in Texas, and a discussion of the Tele-Teacher.

In gathering the information included in this particular portion of her thesis, Miss Robinson queried some 94 stations, both educational and commercial. Sixty-one of the stations and two network branches supplied the information upon which this portion (Chapters Five, Six and Seven) is based.

Presentation of Adult Education Courses by Television Program

Certain principles of presentation were revealed by the answers to the questionnaires. Among them were:

1. The student should understand and subscribe to the purposes of the course. Too often the students are not consulted as to their preference of program type, time, length, etc. This prevents them from being aware of the real goals and purposes of the course.

2. The student's desire to learn should be stimulated by "some sort of communication between the teacher and the viewers. Many broadcasters feel that an entertainment element in the course can accomplish this.

3. Little is done to make the student realize that the course is offered to a group, and that he is part of a "class."

4. Students should be given a chance to participate and should accept the responsibility for some of the learning process. Course and program outlines, supplementary reading lists, question and answer pages, lesson sheets, etc., can give this feeling of participation. Use of such material naturally would depend upon the degree of formality in the program. Often, adult education courses carry no credit and are seen as not needing supplementary materials.

5. The tele-teacher should carry his enthusiasm for teaching as well as his knowledge of the subject to the audience.

6. While the majority of programs use such illustrations as film clips, cards, or blackboard work, there are many other methods which will lend themselves to teaching on TV and at the same time give a variety of presentation to the programs. Teachers often fail to realize that the teaching situation is different from that of the standard classroom and that more must be done to sustain the viewer's attention. Teachers must avoid becoming "gadgeteers," however.

Comments concerning the approach to the production of adult education programs are as varied as the stations answering the author's questionnaires. It is generally agreed that these programs should be divided into two classes —formal and informal. It is difficult to mix the two with success. Entertainment is also an important factor in adult education programming. In a sort of summary comment, one broadcaster remarked: "If the program is well produced, with talent, artistry, and the proper pace, it will be well received. A topic of real interest, properly presented, is important. Producers must understand production techniques and use imagination in packaging the program."

While most broadcasters, commercial and educational alike, cannot afford the time necessary to analyze programs adequately, certain elements, some of which have been noted above, seem to recur frequently, and the author feels that they should be considered in program planning.

Evaluation of Adult Education by Television Program

Too often, program directors do not evaluate their programming periodically, but wait until it is too late. The general sentiment seems to be "we just have to do the best we can and hope the percentages take care of us."

Continued on page 3D

NAEB Research Fact Sheets

Series IV: Audience Studies

22. Preliminary Report of a Comparative Study of Personal Influence Exerted in Selected Content Areas by the Audience of an Educational FM Radio Station.

By Kenneth Kager, School of Communications, University of Washington, Seattle, Washington.

This study was supported by a grant from the National Association of Educational Broadcasters. Its purpose was to measure the influence of an educational FM radio station, using as a model the two-step (or multi-step) flow of communications theory.

Eight subject areas were chosen, four to typify the programming of KUOW-FM and four to typify the programming of commercial stations. The subject areas were marketing, local public affairs, cosmopolitan public affairs, contemporary ideas, theater, serious music, light music, and personalities (disc jockeys). Personal interviews were completed with 125 respondents chosen at random from the KUOW-FM mailing list and 126 respondents from the Seattle City Directory. A "status scale" was developed for rating all respondents. Information, opinion, and gregariousness factors were utilized in the a priori method; in the self-designation method, respondents were asked whether they had volunteered to others outside their families, opinions they had stated during the interview. Occupations were used as a crude measure of the places of the influencees in the social-

economic structure of the community.

Findings

1. Information level, opinion level and gregariousness were all found to be independently significant as contributors to personal influence in the selected subject areas.

2. KUOW-FM listeners are more gregarious (have more friends and belong to more organizations) than non-listeners.

3. When influence rankings of the two samples were compared, KUOW-FM listeners had higher influence scores than non-KUOW-listeners in local public affairs, cosmopolitan public affairs, contemporary ideas, theater, and serious music.

4. When all respondents were ranked on a "status scale" developed from educational and income levels, 55 percent of the KUOW-FM listeners were in the highest ranking, while 19 percent of the non-KUOW-listeners were in the same ranking.

5. Sixty-nine percent of the KUOW-FM listeners were found to be in the professional technical, manager, official or proprietor classes. Twenty-eight percent of the non-KUOW-listeners were so classified.

In summary, KUOW-FM listeners were found to be more gregarious and of higher status than non-KUOW-listeners. They were generally better informed, stronger in opinions and more likely to relay opinions to others in the subject areas considered than were the non-KUOW-listeners.

JEANNIE DIETEMANN

NAEB Research Fact Sheets

Series IV: Audience Studies

23. TV Producers' Competence in Predicting Audience Reactions to a Television Program.

By Norman B. Cleary and George M. Beal, Iowa State College. A paper presented at Mid-West Sociological Society Meeting, Minneapolis, Minnesota, April 26, 1958.

TV station WOI, Ames, Iowa, produced a series of TV programs entitled "The Whole Town is Talking." The programs were discussions of specific community problems by citizens of the community concerned. The particular program with which this paper deals was concerned with the issue of a central water system in the village of Runnells, Iowa.

This paper reports on only one segment of a larger study in which the over-all objective was to explore the ability of communicators to predict the effect of a complex of symbols on one segment of a mass communicatee audience. It was assumed that if a communicator, i.e., TV producer, is to achieve the desired objectives for a program, he must be able to predict how the audience will respond to his message. It was further implied that the abliity to predict correctly in one program may indicate the ability to predict reactions to other types of programs and to other segments of their audience. However, the authors propose no such generalization.

As a measure of ability to predict, 24 items were developed and public affairs TV producers were asked to predict the reactions and actions of the people of Runnells in relation to these items. These items were divided into two groups,

the *overt* such as "Did you watch the TV program?" and the *covert* items such as "Do you think the issues were presented fairly?" A random sample of 44 heads of households of Runnells were interviewed by using field techniques.

Conclusions and Implications

1. The producers predicted accurately on 16 items; they did not predict accurately on 7 items. This gives them an accuracy percentage of 74.

2. On some items the younger communicators placed more faith in their medium than did the older, and more than was apparently warranted by the reactions of the people of Runnells.

3. The fact that the rural background communicators did better than urban background communicators on some items may also indicate that familiarity with values, attitudes and social relations of the audience is important to accurate predictions (Runnells was a rural community).

4. The fact that news producers were better able to predict than non-news producers on certain items may be also due to being familiar with the audience and studying them in their psychological and social setting.

5. The two subgroup criteria which were most significant in differentiating predictive ability—occupation and community background—are sociological in nature. This suggests that these and other sociological variables may be very important in the training of producers who can best communicate with people.

6. Other segments of the mass audience or a sample of the total mass audience should be studied. More types of public affairs programs should be studied.

At best, the present study is exploratory and suggestive. The small size of the sample should be reemphasized. The authors hope that it will stimulate more basic and meaningful research.

JEANNIE DIETEMANN

There are many techniques which can be used for program evaluation, and while the author realizes that few station managers will use them all, the use of some can be very valuable. Periodic evaluations are worthwhile. Often the station personnel involved in the program or small samples of interested viewers can get together with the program director and indicate their reactions to the program or series, informally.

Interviews, a representative council of the audience, or questionnaires can also be used to gain the necessary information. Questionnaires are often misleading, however, as they do not always reveal many subtle factors involved in program reception. Little of such evaluation as this is done by any broadcasters, according to the author.

Miss Robinson points out that because of the diversity of subjects and audiences for ETV programs, no generalizations should be made as to specific program length or frequency, time of day, title, sex of teacher, or whether it is filmed or live. Each program and series should be considered as an individual unit. Generally, however, demonstration and illustrated lectures, or a combination of the two, have been most popular with broadcasters, chiefly because they are less difficult to program. The half-hour time segment has been most popular, but time of day, frequency and the like will depend primarily upon the audience you are seeking to attract.

As to subject matter, subjects favored for local presentation included literature, math, art, topics concerned with local interests, skills as suited to local vocational potentials and local problems. Suggestions for network presentations included science, fact subjects, languages, problems of national scope or problems peculiar to certain areas, and other such subjects which the greater production facilities of the networks permitted.

In a summarizing statement, one expert, Dr. Malcolm Knowles, remarked: "Adult education is coming of age. It is imperative that it take time now to measure its results, both in order to justify its existence and in order to improve its services. Adult education faces a task of immense proportions in the immediate years ahead, the task of helping millions of grown-up people all over the world to transform themselves into mature adults. By perfecting its science now, it will be equal to the task."

WILLARD MARRION

NAEB Research Fact Sheets

Series VII: Administrative and Faculty Reactions to Educational Television and Radio.

8. Closed-Circuit Television in Teacher Education.

By Robert J. Keller and Orrin E. Gould, College of Education, University of Minnesota, June 15, 1957. 65 pages.

The College of Education of the University of Minnesota, with the aid of a grant from the Fund for the Advancement of Education, has undertaken an investigation of the uses of closed-circuit television in teacher training. The investigation is set up as a three-year project, with the 1957-58 school year being the terminal year. A preliminary report was issued in November, 1956. This report is a progress report and was issued at the conclusion of the second year of the investigation. It deals primarily with the uses to which CCTV was put during the 1956-57 academic year.

The application of CCTV which received most attention was that of providing observation of high school classes and demonstration teaching for prospective secondary school teachers in the College of Education. Systematic study of this use was confined to two courses of a sequence—*Education 55A and Education 55 B (Introduction to Secondary School Teaching)*—required of all secdary education students upon entrance to the college. The course objectives have remained generally the same, except that television observation has become an integral part of both courses.

Advantages of CCTV Observation:

1. One high school teaching situation can supply an unlimited number of observers with an experience in common, which also permits a common reference point upon which to base discussion or interpretive portions of the course. Previous to CCTV, only two or three students could visit the actual classroom at a time, and the necessary scheduling procedure was exceedingly difficult.

2. Observation can be well integrated with the content of the lecture or laboratory section. This was nearly impossible under the former system.

3. Television is distinctive in that it allows selected features or details of the class situation to be focused upon and unnecessary details to be excluded. Students who visited the classes under the former system did not always recognize important aspects which can now be pointed out by the instructor of the observation period.

4. TV allows all the students to be present at the observation period, and one coordinator can answer questions on this observation at the moment they occur.

5. With television and a two-way sound system, the instructor of the class being observed can also be questioned and is able to explain or discuss the procedures he has used.

Two appendices are attached to the report, which indicate the dates, units, type of demonstration, purpose or emphasis of demonstrations, and the name of the demonstrating instructor and his department, for CCTV observation periods in *Ed 55 A, B* throughout the winter and spring quarters, 1957. A third appendix lists the principal equipment components of the CCTV facilities at the University of Minnesota College of Education, with a summary of their relationships to each other within the system.

WILLARD MARRION

NAEB Research Fact Sheets

Series VII: Administrative and Faculty Reactions to Educational Television and Radio

9. College Teachers' Attitudes toward Closed-Circuit TV Instruction.

By Royal D. Colle and Robert S. Albert, from the Audio-Visual Communication Review, *Spring, 1958, Vol. 6, No. 2.*

The effectiveness of closed-circuit television in extending the power of individual instructors has been measured and the results have been encouraging. An important corollary to the study of effectiveness is that of attitude. Although this aspect has been investigated in respect to participants in closed-circuit television teaching systems, there has been little done in uncovering the predispositions of non-participant faculties those who might be called upon eventually to participate.

This study investigated the attitudes of non-participants in relation to these five variables:

1. The amount of information they have concerning the use of the medium in this context. (The more information the instructor has, the more he will be likely to accept closed-circuit instructional television.)

2. The number of years of teaching experience they have had. (The less experienced instructors are more likely to accept this innovation.)

3. Opinions regarding commercial television. (If they are strongly critical of commercial television, there is less likelihood of their accepting closed-circuit television.)

4. Academic load. (There will be more approval of closed-circuit television by those instructors having the larger academic loads.)

5. The nature of the subject being taught by the non-participants. (Those instructors teaching courses with potentially more visual material will be more apt to accept the use of television as a classroom aid.)

The sample consisted of social science, humanities, and physical science faculties from four New England colleges. The test method used was the questionnaire.

Conclusions

1. A significant relationship existed between having information about closed-circuit television and accepting the medium in education. This would seem to hold true as long as the results of television experiments continue to be favorable.

2. Among the instructors who disapproved of television, 82 percent claimed they were unfamiliar with its use. Although information, per se, is not a panacea in bringing about attitude-opinion changes, it seems likely that exposure to results of many of the past studies and to the comments of many of the participants would sway a substantial number of instructors, particularly in the undecided group.

3. While there appears to be some reluctance among 95 percent of the sample to approve of closed-circuit television for their own courses, this does not rule out their acceptance of television in education in general. The data show that only 21 percent of the sample felt that television could not be used effectively in any way.

4. The most frequently checked statement expressed the feeling that television would achieve less because of the loss of some personal contact between student and instructor. What is "lost" cannot be easily measured. Evidence points to a comparable effectiveness in information transference between the conventional and televised systems of instruction. Whether the lost, immeasurable element can be compensated for in various systems of televised instruction currently being tested, whether or not it is essential for all levels and kinds of courses, and whether or not it will ever be measurable in the end product are matters of conjecture at this point.

JEANNIE DIETEMANN

received grades of "C" or above.

3. Selected groups of prisoners at San Quentin Prison took the courses solely by television. Those who completed the courses performed at the "C" grade level or above.

Objective Six: To determine professors' reactions to their teaching assignments in this study.

1. While the professors teaching the telecourses found certain stimulating aspects to adapting and presenting their courses for television broadcasts, they found their assignments generally much more taxing than a regular course load, and in some ways less rewarding.

2. The professors felt that one-half release time for preparing a telecourse (the semester prior to its presentation) and one-quarter release time during the teaching semester were not adequate.

3. Professors (other than the telecourse professors) who acted as discussion leaders for the On-Campus TV groups disliked their assignments with varying degrees of intensity.

Objective Seven: To describe some of the practical problems an institution encounters in presenting broadcast telecourses to regular college students.

1. If telecourses are to become part of the regular college program, there are both administrative and advisory policies a college must determine to handle student resistance to taking telecourses; also, a college must so schedule as to accommodate both regular classes on the campus and telecourses taken at home.

2. It is apparent that policy decisions must be reached concerning the course load of professors teaching the telecourses.

3. Many of the production details were handled by student crews working for credit in courses in the Television Department. This direct experience with the production of television broadcasts was deemed an invaluable asset to the training of students for work in television.

JEANNIE DIETEMANN

Broadcasting Languages by Radio

Continued from page 11

cast of "academic course materials," as here classified, results in practically 100 per cent direct instruction in the language itself, in which process the broadcaster uses both for himself and the listener the *same materials* as used in on-campus classroom instruction. "Monitored classroom instruction" is the actual broadcast of the instructor before his class, with his pre-enrolled radio listeners following as best they can.

The non-instructional series (*Report from Abroad, Continental Comment, Paris Rendezvous,* and others) are meant to entertain, though they are information-centered against the backdrop of a particular foreign language and its people. One of these, *Report from Abroad,* has just started its seventh consecutive year on WBAA. It consists of a 14-minute daily discussion by a single instructor assisted occasionally by a guest, 3-minute recorded conversations, music off disc, or recordings made by the instructor while in another country. Each year several faculty members return from foreign travel and study. As stated by Dr. Elton Hocking, the Department Head, "Accordingly, six years ago, *Report from Abroad* went on the air. After 780 broadcasts, it is still continuing the original technique: informal first-hand reports on the daily life, problems and activities of people with whom we have recently lived 'over there.' "

What broadcasting policy forms the basis for this use of educational radio? Just as language is an introduction to the life and culture of a people, so knowledge of and appreciation for the customs and practices of a people leads to an introduction to their language. Radio broadcasts restricted to *formal direct instruction* must presume well-organized and highly motivated listener-students to be successful. A program given to cultural or background material *only* can, of course, be easily designed and, with imagination, produced to attract listeners merely on the basis of general interest value. But when each individual program in a series combines *both types* of content, the overall results, in the long run, may serve more objectives of the language department *and* the educational broadcaster as well.

At no time has the department seriously considered awarding credit for work done by listener-students. However, television does make this possible, and more feasible in other ways, too. At Purdue, it has been a general practice within the Modern Language Department to relieve an instructor

of an appropriate amount of teaching load in lieu of on-the-air broadcasting. This aids the station producer immeasurably, as well as providing an atmosphere, and other elements, necessary for a successful broadcast venture.

The Results of Language Broadcasting

What have been the results of over 2,800 language broadcasts at Purdue during the past ten years? One result has *not* been curtailment of the amount of broadcasting by the department for the year just started. The current year *may* easily exceed any previous year. Needless to say, the advantages are mutual, as between the station and the department itself. A recent analysis of student enrollment for the last ten years shows the normal and expected increases in the number of registrations. After careful checking, the department has found no evidence to indicate that the results of our language broadcasting have been a prime cause for these increases in on-campus student enrollment. However, the department's student increase during the ten-year period is well beyond that of any other department in the division. According to the department and its head, Dr. Hocking, to increase student enrollment has never been the purpose behind the the plan of continued radio broadcasting. One pleasant outcome, of course, has been the thousands of letters from appreciative listeners. As between department and radio station, the results have been about equally divided. There are eleven general results that bear mention:

1. The broadcasting of these programs has trained many competent broadcasters, outside our WBAA staff, for use on other scheduled programs and in related broadcasting activities.

2. One outcome six years ago was the instigation of a new credit course, "The Pronunciation of Six Major European Languages," that serves as a "phonetic" introduction to foreign language study and as a tool course for radio announcers in training at the University.

3. A broadening of professional horizons for departmental members and for the general listening public as well has come about.

4. Added recognition within the university has been gained for the Modern Language Department and, also, for our radio station.

5. There has been some gain in prestige for the department among other language departments

6. A single program series may provide the prod to hasten the adoption of a new educational practice. Seven years ago, one series, *Sixth Grade Spanish*, gave impetus within our local community (and in milder degree to others) to the teaching of foreign language in the elementary schools. In this case, one dynamic language teacher simply took to the air to show teachers and parents how it could be done.

7. These programs have promoted inter-departmental endeavor within our institution. Our Modern Language Department (in ad-

dition to the School of Agriculture, of course) provides an excellent model for other faculty uses of our radio station.

8. Language instruction by radio *can* result in the formation of on-campus adult evening classes for credit. This has happened at Purdue with the offering of a 3-credit course in elementary Russian. Many of the adults now enrolled in this course were regular radio listeners to "*Conversational Russian*" broadcast last spring.

9. In order to accomplish this amount of radio broadcasting, many departmental staff members have increased considerably their contacts with consuls, ministers, and some foreign governments.

10. The program planning and broadcasting experience over this ten-year period has given the participating staff members additional confidence and greater resourcefulness in applying their teaching techniques in the classroom.

11. Ten years of language broadcasting have gained noticeable respect and publicity for both the Department of Modern Languages and Station WBAA at home, throughout our listening area, and among numerous colleges and universities around the nation by virtue of the NAEB network. And, not least of all, they have resulted in a large measure of good will for the university.

Television: an Aid to Survival

Continued from page 11

entists are participating from time to time.

Co-partners with NBC in this unprecedented educational venture are the American Association of Colleges for Teacher Education, the Ford Foundation, and the Fund for the Advancement of Education. Among the corporations providing financial assistance for the course are the American Telephone and Telegraph Company, International Business Machines Corporation, Pittsburgh Plate Glass Company, and United States Steel Corporation.

The presentation over television of this college course for credit on a nationwide basis has been referred to as meeting "an emergency in American education, the kind of emergency on which our national survival may ultimately hinge," by Robert W. Sarnoff, chairman of the Board of NBC.

Perhaps it requires a critical emergency of this nature to enlist for education the powerful resources of a national television network. This may prove to be the needed precedent which will convince those responsible for television programs that education is, in fact, the key to national survival, and that television (and radio too) must shift major emphasis from entertainment to serving, as far as it is able to do so, the educational needs of the nation, its young and old alike.

—TRACY F. TYLER, *Editor*

The Chelsea Project

Continued from page 10

piece through which she receives instructions.

Normally, a small Electrovoice or Astatic lavalier microphone is used for classroom instruction.

As the teacher wants to switch a camera, she merely reaches for the switching console and pushes the appropriate button. The new image immediately appears on the screen.

What, in the meantime, is happening in the classrooms around the school? Well, that depends on the subject matter, but in no case is it merely passive viewing. Every classroom has a 21-inch Admiral receiver. All teachers will have received a program guide for each lesson, with suggested preparation and follow-up activities, whether the lesson be a "live" science presentation or English through films for non-English speaking children. In the latter case, an active role for the classroom teacher and children in responding to the filmed stimuli is especially called for.

And what is happening at home, in the community, during the in-school lessons? Well, a child who is home sick may be joined by her parents during a lesson. Or parents will tune in just to see what their child is getting in science or music that day—helping again to bridge the gap between home and school—to reduce the occasions when in response to the question: "What did you do in school today?" the child invariably answers: "Oh, nothing."

In-school program: summary

A beginning has been made in developing a closed-circuit school TV system that could be operated by two people a teacher and one technician. The level and quality of the teaching—of which nothing has been mentioned here—has been sufficiently good so that two P. S. 33 TV science teachers were asked to teach elementary science over Channel 11 in New York, as part of the new State Board of Regents TV teaching project.

Certain innovations in design and utilization of equipment make possible an installation of the Chelsea TV type at a fraction of the cost usually associated with any kind of television.

Language teaching program

Chelsea Closed-Circuit Television is attempting to teach a second language, English or Spanish, by television, utilizing films created for the purpose by Language Research, Inc., of Harvard

Crystal Neves, 11, of 150 West 27th St., follows her science lesson given by 6th grade teacher Harriet Nelson from a classroom in P.S. 33, even though she is home with a cold. Telecast is part of regular morning program presented over Channel 6 by Chelsea Closed-Circuit Television.

University. The method employed is the Graded Direct Method used in *French through Television* and in Pocket Book editions of English, French, Spanish, German, Italian, Hebrew and others. Teaching is directed to children and adults, in school and at home, with teachers and without.

The language problem has a number of sides. Primary to the Chelsea area is the problem of promoting the speedy integration and assimilation into mainland culture of the many Spanish-speaking newcomers to New York. During the past summer, the films used last year in Chelsea have begun to be

used by NBC's Channel 4 in New York on an early morning program called *Aqui se Habla Inglés.*

But assimilation is no longer thought of as merely a one-way street. We now think of diversity within unity. Thus, native English speakers are encouraged to learn Spanish by television. Inevitably, this can be expected to provide a certain morale boost—a lift to the newcomers, who suddenly find that somebody else is trying to meet them half-way.

But more significant in the long run than either of these is simply our growing awareness of the inadequacies of some of our language teaching methods—at least when judged empirically. Language Research, Incorporated, is trying to evaluate its techniques. Chelsea TV provides a good working ground for trying out new ideas and methods. A recurrent problem has been not merely how to teach languages, but how to design tests and evaluations that will tell you whether any progress is being made in language learning. These are some of the things behind the three hours and ten minutes of English instruction and two hours and twenty minutes of Spanish instruction weekly on Chelsea's Channel 6.

Community integration

One of the aspirations of social workers and others engaged in community welfare activities has been to break down the walls between the agency and those who have the greatest need of its services, those who do not participate in its activities. Through the Chelsea Closed-Circuit Television Project, the Hudson Guild and other agencies participating in the experiment are trying to do just that. Moreover, it is hoped that closed-circuit television can be utilized as an integral part of the community social service program.

Thus, one weekly program introduces local political candidates to the neighborhood, undergoing questioning by local residents. Or a member of the Hudson Guild staff finds in song that which unites—as well as differentiates—men. Or some teenagers put on a replica of the Dick Clark show. Or a New York University professor talks about cultural anthropology—without calling it that.

The local health department officer presents a weekly health program; the Spanish-speaking community puts on a variety show; the housing authority investigates the possibilities of using closed-circuit television as an adjunct to management; the tenants' organization and local P.T.A. conduct meetings on TV; the children plant a tree on Arbor Day; the local Little League champions receive their trophy; parents join a psychologist in discussing problems of understanding their children.

Can the Chelsea Closed-Circuit Television Project be turned into a genuine medium of community ex-

pression and inter-communication? Just as the town meeting, church social, cracker barrel, and weekly newspaper once provided common grounds for a village society, so it may be that the means of expression made possible by an unpretentious closed-circuit television system rooted in the school, home, and community service agencies can help reestablish channels of communication largely lost or forgotten in the heterogeneous urban culture. Can ways be found to turn closed-circuit television over, in large part, to the community?

We do not, by any means, have the answers. There are, however, some indications that the project may be fulfilling some felt needs—as well as a good many that are unfelt. These are areas which will be increasingly investigated during the coming years.

Evaluation

Evaluation is being carried on at two different levels—in-school and community. The in-school phase of the Chelsea Project is being evaluated as to quality of teaching, learning and retention by children, collateral effects on the children, and the effect on teachers as in-service training.

Evaluation of the community phase is being designed to cover audience measurement, learning, and social adjustment as measured by both objective data and subjective analysis.

The in-school evaluation is under the direction of the New York City Board of Education's Bureau of Curriculum Research. The community phase is under evaluation by International Research Associates of New York.

In-service training

One further aspect of the Chelsea Project that has expanded to a considerable degree relates to the school use of closed-circuit television as an in-service teacher-training device.

At Chelsea, in-service training is being carried on at both informal and formal levels. Informally, every lesson presented over TV can be a model for the classroom teachers. More formally, however, an in-service training course for some 100-odd teachers in the P.S. 33 district is being given this fall, using the GPL large screen projector in the auditorium of P. S. 33. After a formal lecture and demonstration, members of the audience can ask questions of the lecturers by means of roving microphones connected to the school's public address system. Following the auditorium presentation, the "class" breaks up into smaller groups in different rooms around the school, under assistant instructors.

The experience of the Chelsea Closed-Circuit Television Project during the past year, while not allowing many broad generalizations, does, however, suggest a number of situations in which a closed-circuit

system of this kind could be usefully and relatively inexpensively employed:

1. as a district in-school system within a large city, where special problems of home environment tend to be regional in their distribution;

2. a city-wide school system specifically used for teacher-training examinations, and administration;

3. as an unlicensed ETV station where local conditions require a community antenna and there is no ETV reservation;

4. for education directed to institutions other than schools and colleges, e.g., prisons, youth homes, hospitals;

5. wherever there exists a high concentration in a small area of people with a hard core educational or cultural problem;

6. as an instrument for the development of community leadership;

7. as a form of psychotherapy.

Eyes for Mankind

Continued from page 18

visual and participative learning possible. The lecturer, pirouetting before the mirror of his own self-esteem and articulateness, who will not work for as close to total visualization of the content as it requires, is a sickly creature of the dark ages well past us. The lecturer-in-the-classroom format so typical of educational television suffers acutely from the impotencies of a verbally-oriented past brought now into the wide television stage of the present, when the practices televised are already at least thirty years out of date. Let's say it this way: Baxter can do it, but the medical professor with his medical students usually is half-baked. If we will work very hard we can beat Baxter all hollow in visualizing content, providing it is truly visual. Nor must we just visualize words written on cards or blackboards.

There is a golden mean which allows us to wed people with things. Marya Mannes, commenting on current BBC television in a recent *Reporter* article, neatly capsules a happy concept of TV production as she says that "their programs are expert in the meshing of ideas, personalities and visual documentation." As humans, we learn by the grace of other human beings, for man is the limitation, and also the measure. However, in education in the sciences, the ideas and their visual documentation are dominant, not the personalities.

Medical Education: a Proving Ground of Television

A general word about medical education. Education in medicine has begun to change from a system of teaching to one of learning. There are now less advanced and more advanced learners, the erstwhile students and teachers. In all humility, the more advanced learners have accepted as their true role the preparation of the stage for learning processes of the less advanced learners. In medical education it is Mark Hopkins, M. D., with a future M. D. at his side, standing at the bedside of the indispensable third party, the patient who demonstrates the visual and other phenomena of disease. The patient is the key; his objective and subjective syndrome of disease and health are dominant in the learning process. It is our function and inescapable responsibility then to learn how best to observe and demonstrate the patient. Prometheus brought the creative fire of curiosity to men. Can our part of that fire be the development of new eyes to view mankind?

Television appears to be predominantly a visual medium. Of course it is easy to allow the insistent voice to take more than its due share. But I urge upon you again the primacy of sight as a sense organ, but especially as a dominant thought component in most humans. Add to this the inherent force of action witnessed at the time of its happening, TV's vaunted immediacy. Finally, add to this the unique capacities of the television eye. We have produced what is surely the most cogent mode of projective vision yet developed.

You who are concerned with broadcasting studios and stations have set your eyes and those of the television medium principally outward to the lay public and to learning audiences beyond your studio walls. May I term this the outer eye of TV, external TV, or just ETV. Some of us are far more concerned with the television medium as it applies to the problems within our institutional walls, with its use in laboratory and field research, its applications to the daily tasks we perform, and its adaptation to the ever-more-intensive hammering at those captive learners who live in our classrooms, laboratories, and clinics. This I will term the inner eye of TV, ITV, instructional or internal TV. Engineers have called it CCTV because we don't trouble the airwaves or the FCC and can keep our electronic signals to ourselves. Lastly, there is the TV of the future, whose future is very bright indeed. The eyes for mankind that portend are amazing ones indeed, and our children's lives will be wedded to their uses. This I will call unexplored Television, UTV.

For the application of these three aspects of television, perhaps a medical center is not unfitting as a type-species institution. It is a respectable university within a

greater university. This past year Kansas University Medical Center functioned with a 7.4 million dollar operating budget.[6] There are about 325 faculty and some 1,300 staff members. It performs large amounts of fundamental and applied research, in our case 1.3 million this year. It works very hard with respectable numbers of different kinds of learners over prolonged periods of time: 800 undergraduate students of the medical professions, plus 5,300 graduate and postgraduate students of the medical sciences in formal courses last year. It performs a vast amount of skilled labor in the care of new babies (1,776), outpatient visits (124,427) and hospital patients (15,534) ill with countless ailments. To these responsibilities for research, education, and medical care, the powers of television have direct and sometimes revolutionary application.

Human Vision and Television

The powers of television can be considered as comprising four categories of sight.

Ordinary vision. Here the television tube (orthicon, vidicon or iconoscope) acts like a human retina. Optimal position, magnification, multiplication of audiences and privacy are the principal advantages for ITV. For broadcast ETV you all know about immediacy and access to mass audiences, even though medical television has some unique potentials.[7]

Extraordinary vision. Here the TV tube is used for light-gathering or light-transporting, as with telescopes, fluoroscopes, microscopes and endoscopes. In this category we continue to deal with what are in effect extensions of the human retina, since these powers concern visible light.

Frozen vision. Here TV signals are trapped on film as a kinescope recording or are committed to magnetic video tape, and become permanent reproducible images.

Modified vision. Here a TV tube has been constructed to react to a segment of the electromagnetic spectrum other than visible light; the resultant patterns are translated to light images on a receiver. Notable among this expanding family of receptor "eyes" are vidicons sensitive to ultra-violet, to infra-red, and to x-rays.

Photographs illustrate better than any words the many efforts to embark upon a broad-based program of non-entertainment medical television development which seeks to pay attention to the broadcast outer eye, the classroom inner eye, and the unknown eye of TV for tomorrow. Certain work of others which appears to be of significance in our cumulative national progress has properly been included; much

6. The program of television development at the Kansas University Medical Center is supported principally by the W. K. Kellogg Foundation, Battle Creek, Michigan.

7. Warren, F. Z. *"TV in Medical Education."* *American Medical Association Handbook*, 1955, 96 pp.

is omitted; much television activity is of course unknown to us. Step by step we are working with research, education and medical care, seeking valid concepts and sound applications for these new eyes for medicine.

(At this point, Dr. Ruhe showed a series of thirty-seven slides, illustrating many uses of television in medical education and practice.)

This series of photographs and interpretations reveal some few of the expanding possibilities of the outer, the inner, and the unexplored eyes of TV. Some generalities are perhaps possible, suggested for this current hour of ETV, ITV and UTV development.

Conclusions

1. Our limited concepts of studio-based broadcast television should change ever more steadily toward understanding of and work with that range of TV powers which strengthen the arm of the investigator, the arm of the advanced learner who presently calls himself a teacher, and the arm of the workaday laborer in medicine, in the sciences, and in many of life's complex tasks. We must establish educational TV *services*, not merely a broadcast station.

2. Serious self-evaluation of our roles in light of our backgrounds is called for, so that each of us truly may serve our institutions and our society, as much by teamwork, consultation, and referrals to others as by our own hands.

3. The dimension of the job which faces all of us within the scope of so-called educational television is far more challenging than perhaps we realize. We all face a lifetime of continuing training for ourselves so that we may work creatively toward the democratization of this ever-more-powerful new medium, toward our merging with that medium in the most creative way.

Our self-evaluation must be very blunt and honest. Following this, we must train ourselves in multiple skills throughout our lifetimes, until our respective coronaries. Finally, then, the men, the medium and the message will truly have become one.

Most of all must we accept the primacy of sight and the underlying dominance of visual images over auditory and symbolic ones in a high proportion of our areas of life and thought, however well we integrate them with our loom of language. With the acceleration of more facile photographic and electronic devices for still and motion pictures, we are hastening down the tough and challenging road to human projective vision. Someday, finally, we may even create that dream of man, the voluntary egestion of our inner sights: electronic telepathy.

The rug has been pulled. The jig is up. Let us see that we create tomorrow's visual culture in 3-D supercolor on the wide screen of the human world.

Culture Is Our Business

Continued from page 5

cause the literary man has a huge investment in the linear structure of culture which effectually insulates him from the onset of these new forms, so that he just can't see them.

One of the great problems in pedagogy, I think, is a kind of process of translation from one culture to another culture that we are undergoing; and an extensive medium revolution, such as the electronic one, turns us all into mental DP's. We are all displaced persons today, whether we like it or not; and we are all confronted with huge undeveloped countries of the mind where we hardly know what to do first.

Conferences like this are rightly dedicated to devising strategies of culture in these new and revolutionary conditions. When I say the medium is the message, I mean that by the time a new medium has been brought into existence, the whole community has really cooperated through its entire technology and culture to produce such a new form.

Now, myself, I can say I became interested in these problems and in these media through a study of modern poetry and painting because I noticed over and over again that it was the most experimental poets and painters and musicians who were most eager to exploit the new media in any period of the past—that they imported the meaning and the form of these new media into their paintings and poems and compositions and, in a sense, solved certain problems for us by so doing. I will try to explain that as we go along. For example, to take the very familiar world of advertising, here is a new area of experience a new world of icons. Photography has made possible on a scale unknown to mankind in any previous culture a world of icons, of images. The message of these images has very little to do with the product advertised. These images are themselves new forms quite independent of Coca Cola or soap and so on. They advertise one another more than they advertise commercial products. They create a new climate of attention for new forms and constitute a kind of revolution in our art and our preception, for which our schools, I would say, do nothing.

We have simply not met the challenge of this new type of experience as an area for perceptual training or judgment training on the part of the young. Historically, we have set up a school system

which is geared to criticize, process, and appraise the message of the printed word and of print technology; we have seen our educational system, quite naturally and properly, as a sort of civil defense against propaganda, a training of the young in means of coping with the fallout of these media; and we have done nothing, I think, to prepare our students for, or to protect them from, the enormously greater media-fallout of the electronic forms or even of the movie.

The ordinary person feels that advertising is able to affect only those who are taken in by the message or who are unable to detect some failure of logic in the appeal. Now, this is a purely literary bias toward advertising and provides exactly no defense against the basic forms and the icons of advertising.

In politics, in the same way, an election can have revolutionary consequences, as in Canada recently, where there was no platform, no issues, no program offered at all by either party, and yet there was the biggest vote in history. Here the huge shift in allegiance to parties was accompanied by no issues at all—just images of candidates. Images, incidentally, which travelled across the language barriers of French Canada quite unimpeded, whereas previously radio and press images did not travel across the language barriers. The TV image penetrated quite easily and had most notable consequences in the vote of Quebec. We have no education to cope with the politics of icons because in our literary innocence we don't really believe that an icon can influence votes. Our literary training, our critical training, is not able to explain to us what is happening to us, so we say that nothing is happening.

I am having to exaggerate and simplify many of these points in order to establish beachheads of some sort, but it seems to me that, whereas in the age of print our educational effort is quite properly directed to the message and to the criticizing of the spelled-out lineal sequence of words, under electronic conditions we have to transfer our critical attention and powers of perception and judgment to the medium itself, and to become intensely aware of what its properties are and what its powers over our psyches are.

Let me skip back to an earlier period of print to show you what happened in the sixteenth century. Montaigne, the great French essayist, was, so far as I have noticed, the first to use print as a new art form. Print was then more than a hundred years old. Nobody had seen that print was a new art during those hundred years. People simply went on pretending that it was the manuscript in slightly more accessible form. Montaigne saw that print was a totally new form; and he invented a revolutionary form of prose to express this change. In his *Essays* he snapshots his own mind in the act of reading. The Montaigne essay is a series of snapshots of mental postures of a reader while reading. Now this is possible

only because print moves at high speed. Whereas the manuscript reader moved painfully from letter to letter and word to word, the print reader moves at high speed as in a movie form, and can, therefore, have a totally new kind of experience of word and image. The art forms, the changes in poetry and prose resulting from the form of print, were amazingly extensive and complete.

The same thing happened with the telegraph. It changed our prose style—it changed our whole concept of literature a hundred years ago. Because of the telegraph, the first real onset of the electronic revolution in our lives, the simultaneous co-presence of information from everywhere at the same moment was made possible. This kind of global snapshot was inconceivable before the telegraph.

The co-presence of information from everywhere at the same moment put pressures on the format of existing newspapers that were altogether new. The modern newspaper page or the telegraph newspaper page has a structure that is basically an electronic structure; and that structure I would, perhaps not adequately, describe as nuclear in this respect: that each news item in a modern newspaper is a little world of its own, utterly unconnected with any other item. There are no perspectives but there is a date line. There are no perspectives giving an over-all unity—a single point of view—to the entire news. Each item from Cairo, Berlin, Tokyo, wherever, is a little nuclear structure, creating in that area its own world; and you, the reader, become co-producer, co-creator in that form. *You* have to produce the meaning. In the previous literary forms, the meaning or point of view was provided by the writer—packaged and capsulated and delivered as a consumer item to the passive reader. Under telegraphic conditions, and I think this extends all through the electronic media today . . . under telegraphic conditions, the reader becomes co-creator, not just a consumer. He becomes co-producer, and the sheet of news that he is confronted with is a seemingly irrational hodge-podge, a crazy surrealist quilt. Any page of any newspaper is just that. But we are absolutely skilled by this time in providing meaning.

Now Edgar Allan Poe was the first artist to respond to this new challenge and to invent new forms in poetry and prose that, I think, are basically electronic. He produced the symbolist poem in which the reader is merely given a do-it-yourself kit. Take these items and these suggestions and go to work. And he produced the detective story in which the struggle with the situation is partly carried on by the reader, who cooperates with the writer as co-author of story. The crime story is a very natural and fitting form for TV, for that very reason, because TV is not primarily a consumer form but primarily a producer form—a do-it-yourself form—as I think I could

explain if I had the time.

I don't know whether I can adequately explain this shift, but the movie, closely related to the printed word, the sort of ultimate extension of the still shot of the printed word into a final form, I think has nothing common with TV. The movie package is a sequence of still shots, ideally patterned for the consumer, who looks at a screen while the light goes over his head. The TV viewer does not see a series of still shots. He doesn't see a series of filled-in perspective shots of the sort that the movie cameras offer, and he is partly the screen. The light is beamed at him through the image. But this is a rather superficial and sketchy way of merely pointing out that there is a great difference from c i n e m a in the formal structure of TV; and I would suggest, in considering educational programming, (and I'm sure much of this has already been learned) that there is a characteristic power or strength in the TV form that will handle certain materials and not certain other materials. I would say that TV is a most unfortunate medium from the point of view of the advertiser, because it is not a c o n s u m e r medium, and it doesn't really tell the consumer hyperbolically the joys and glories of a particular substance, etc., etc.; whereas the movie image can do that—superbly.

However, that is only looking at it with one rather swift glance, and perhaps there will be a moment that we can come back to discuss it. Let me mention that the characteristic form of the electronic age is the simultaneous, the instantaneous—not the sequential, not the segmented, not the fragmented. The new media are inclusive, total, and instantaneous.

Now, one of the things that happens, of course, is that the walls of classrooms tend to get rather porous or translucent under these conditions. There is more going on outside those walls of learning than there is inside under electronic conditions. This changes the role of teacher and student inside the classroom—or could. There is a M a g i n o t Line in these matters, strongly fortified, of lineality and our stake in the old form of knowing. But one w i s h e s that the Maginot Line were really an effective strategy, and that one could really depend on it to do an adequate job of arresting or slowing down these terrifying changes.

But instead we see the walls go down, for example, between youth and age, between the three-year-old and the thirty-year-old; u n d e r electronic conditions they both get much of the same programming in our type of environment. The walls go down between business and culture—I m e n t i o n e d that earlier. Business becomes an area of culture, needing more and more artistic aid, more and more consulting and creative work from the artists of the community in order to do business, in order to do packaging; in order to handle its own problems at all it has to become

more and more cultural, more and more artistic. The walls in the same way go down between art and science. Science acquires more and more the character of poetry and art, and poetry becomes more and more a science. This happened some time ago. It isn't something that is coming—it happened a hundred years ago with the symbolists.

Let me mention one man whose strategy of culture in this sort of paralyzing situation is different. Wyndham Lewis, the famous painter and writer who died recently, looked at these situations during his lifetime and he said, "Stop! Put a lid on all these media. Otherwise you are going to be destroyed entirely. The dissolution of your institutions resulting from the release of these forms will be complete. There is no kind of boundary or structure, no kind of definition in your environment—legal, social, and so on—which will withstand the impact and the power of these forms. It does not matter who is running them. The very forms themselves will dissolve these boundaries and everything that you consider civilized. They will turn you all into a Beat Generation."

Now, he said that many times and over a long period of years in works that have yet to be read by most people. Now, I think as educators we ought to know that a great and serious mind spent its lifetime warning us that these forms are so powerful and their logic and their dynamic are so destructive of all civilized boundaries and restraint that it is better to lock them up in a Pandora's box, as it were—put them away. Because this is another way of saying to ourselves as educators, these forms represent a terrible challenge to us to teach them restraint; to teach them civilized uses is something far greater than we have ever tackled before in our human history. I think, therefore, that the study of the media themselves and of their powers, quite independently of the cultural or utilitarian purposes that they have served, has been imposed upon us as a new task.

Meantime, TV is being held back from many of its own characteristic modes of expression by the hang-over of movie influence on it. It will take decades, perhaps, to untie the relation between movie and TV which is historically a rather accidental one.

But this same kind of confusion has, on a much smaller scale, happened in many previous periods, as, for example, in the period of print itself, when print wasn't used as print at all, but merely used as a cheaper manuscript. Every time I hear myself discussing this pattern of the co-existence of the media and the co-existence of the global community of learning—I am staggered. Because its implications for all of us are just as bad or terribly complete as they sound. But surely there is a very large promise of global equilibrium and unity also locked up in that terrifying challenge.

Officers, Directors

FRANK E. SCHOOLEY, President; WILL-AM-FM-TV, University of Illinois, Urbana.

BURTON PAULU, Immediate Past President; KUOM, University of Minnesota, Minneapolis.

JACK McBRIDE, Vice President; KUON-TV, University of Nebraska, Lincoln.

HASKELL BOYTER, Secretary; WABE & WETV, Board of Education, Atlanta.

ROBERT J. COLEMAN, Treasurer; WKAR-AM-FM, Michigan State University, East Lansing.

E. ARTHUR HUNGERFORD, Jr., Director, Region I; Metropolitan Educational Television Association, New York.

VERNON BRONSON, Director, Region II; WTHS-FM-TV, Dade County Board of Public Instruction, Miami.

WILLIAM HARLEY, Director, Region III; WHA-AM-FM-TV, University of Wisconsin, Madison.

RICHARD A. VOGL, Director, Region IV; WOI-AM-FM, Iowa State College, Ames.

ROBERT SCHENKKAN, Director, Region V; Director Radio-TV, University of Texas, Austin.

EDWIN ADAMS, Director, Region VI; School of Communications, University of Washington, Seattle.

MRS. GERTRUDE G. BRODERICK, Director at Large; Radio-TV Section, Office of Education, U. S. Department of Health, Education, and Welfare, Washington 25, D.C.

Headquarters Staff

14 Gregory Hall, Urbana, Illinois

HARRY J. SKORNIA, Executive Director.

HAROLD E. HILL, Associate Director.

CECIL S. BIDLACK, Television engineer.

ROBERT UNDERWOOD, JR., Network manager.

MRS. NANCY WHITMORE, Network Traffic Manager, Editor, and Placement Officer.

JESS TRUMP, Assistant Network Manager—Production.

Journal Staff

TRACY F. TYLER, Editor, University of Minnesota, Minneapolis 14.

MRS. RUTH STILLWELL, Managing Editor, 231A Gregory Hall, Urbana, Illinois.

Editorial Board

WILLIAM BENDER, WUOM, University of Michigan, Ann Arbor.

MRS. GERTRUDE G. BRODERICK.

FRANKLIN DUNHAM, Office of Education, U. S. Department of Health, Education and Welfare, Washington 25, D. C.

REV. R. F. GRADY, S. J., University of Scranton, Scranton.

FRANK E. SCHOOLEY.

EDWARD STASHEFF, University of Michigan, Ann Arbor.

ELMER G. SULZER Indiana University Bloomington.

TRACY F. TYLER.

Each volume of the *JOURNAL* beginning with volume 9 is available on microfilm from University Microfilms, 313 North First Street, Ann Arbor, Michigan.

Contents

DECEMBER 1958
